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ORGANIZATIONAL STRUCTURE AND INTERORGANIZATIONAL DYNAMICS.

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IN A STUDY OF ORGANIZATIONAL INTERDEPENDENCE, INTERVIEW RESPONSE DATA WERE OBTAINED IN A LARGE MIDWEST CITY FROM 520 STAFF MEMBERS OF TEN PRIVATE AND SIX PUBLIC SOCIAL WELFARE AND HEALTH ORGANIZATIONS PROVIDING SPECIAL SERVICES FOR THE MENTALLY RETARDED. INFORMATION OBTAINED FROM RESPONDENTS WAS POOLED TO REFLECT PROPERTIES OF THE 16 ORGANIZATIONS, WITH JOINT PROGRAMS AMONG THE 16 ORGANIZATIONS RANGING FROM NONE TO 33. INCORPORATING PROCESSES OF BOTH CONFLICT AND COOPERATION INTO A SINGLE MODEL OF INTERORGANIZATIONAL ANALYSIS, BASIC ASSUMPTIONS OF THE 1967 STUDY INCLUDED--(1) DEGREE OF ORGANIZATIONAL INTERDEPENDENCE IS LIMITED BY A STRAIN TOWARD MAXIMUM ORGANIZATIONAL AUTONOMY, (2) PARTICIPATION IN JOINT PROGRAMS ENABLES ORGANIZATIONS TO OBTAIN MORE RESOURCES (CLIENTS, FINANCIAL SUPPORT, PERSONNEL) FROM THEIR ENVIRONMENT, AND (3) ORGANIZATIONS PARTICIPATING IN JOINT PROGRAMS ATTEMPT TO MAXIMIZE THEIR GAINS WHILE MINIMIZING THEIR COSTS. THE STUDY FOUND THAT HIGHLY INTERDEPENDENT ORGANIZATIONS (1) ARE MORE COMPLEX IN THEIR STRUCTURE, (2) HAVE MORE ACTIVE INTERNAL COMMUNICATION CHANNELS, (3) HAVE MORE DECENTRALIZED DECISIONMAKING STRUCTURES, (4) TEND TO BE SLIGHTLY LESS FORMALIZED, (5) HAVE SOMEWHAT LESS ROUTINIZATION OF TECHNOLOGY, (6) ARE MORE INNOVATIVE, AND (7) HAVE NO SYSTEMATIC RELATIONSHIP BETWEEN THE DEGREE OF ORGANIZATIONAL TECHNOLOGY AND MORALE. THIS DOCUMENT IS A REVISED VERSION OF A PAPER PRESENTED AT THE ANNUAL MEETING OF THE AMERICAN SOCIOLOGICAL ASSOCIATION (SAN FRANCISCO, AUGUST 30, 1967). (JK)

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ORGANIZATIONAL STRUCTURE AND INTERORGANIZATIONAL DYNAMICS*

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The major purpose of this paper is to explore some of the causes and consequences of interorganizational relationships. In particular, we are interested in relating this aspect of an organization's environment to the structure and functioning of the organization. Most previous studies of organizations have referred to them as if they were separate entities existing in a vacuum.[1] But organizations affect and are affected by their environments. The concept of interorganizational relationships allows us to think more systematically about those aspects of the environment that are important for the organization.[2] The few studies of interorganizational relationships have not shown how they affect the internal structure of the organization. Thus, the environment and the organization have largely been studied separately. Our purpose is to attempt to integrate these two different approaches to organizational analysis in a single theoretical framework.

A secondary purpose in calling attention to this relatively neglected area of organizational analysis is to suggest that both the processes of conflict and cooperation can be incorporated into the same model of interorganizational analysis. Caplow has suggested a model of conflict involving the variables of subjugation, insulation, violence, and attrition.[3] This model focuses neither on the particular organizational conditions that give rise to organizational relationships nor on the consequences of them for internal organizational structure.

The models of pluralistic societies described by deTocqueville and more recently by Kornhauser underscore the importance of autonomous and competing organizations for viable democratic processes.[4] Such theoretical models assume that the processes of conflict as well as cooperation inhere in social reality. Recent American social theory has been criticized for its excessive emphasis on a static view of social processes and for failing to include conflict in its conceptual models.[5] The study of interorganizational relationships appears to be one area which can appropriately incorporate both the processes of conflict and cooperation.[6]

There have been a few studies of organizational exchanges, most notably Levine and White,[7] and several discussions of the topic such as Litwak and Hylton,[8] Evan,[9] Barth,[10] and Form and Nosser.[11] But these studies essentially conceive of the organization as an entity that needs inputs and provides outputs, linking together a number of organizations via the mechanisms of exchanges or transactions. But this is only one way that organizations become interdependent. They can also <u>share</u> clients, funds, and staff to perform activities for some common objective. Thus, our measure of the degree of organizational interdependence is the number of joint programs that the focal organization has with other organizations. The greater the number of joint programs, the more organizational decision-making is constrained through obligations, commitments, or contracts with other organizations, and the greater the degree of organizational interdependence.

The reader may wonder why the concept of the joint program is apparently such an important kind of interorganizational relationship. The answer is that, unlike exchanges of clients or funds which may only imply the purchase of services, a joint program is often a relatively enduring relationship, thus highlighting the problems of organizational interdependence. In other words the problems of cooperation and conflict become much easier to comprehend when there is a joint program between two organizations since it is a more involved type of interdependence than exchanges. Thus, they provide a way of studying more readily the problems associated with this kind of relationship among organizations.

The joint program needs to be carefully distinguished from the joint organization. The latter refers to the situation in which two or more organizations create a separate organization for some common purpose. Thus the community chest has been created by health and welfare organizations for fund raising purposes. Similarily, Harrison has noted that the Baptist Convention was created by the separate Baptist churches for more effective fund raising.[12] Business firms have created joint organizations to provide service functions. These are clearly different from the joint program because these joint organizations have a separate corporate identity and usually their own staff, budget, and objectives.

Some examples of joint programs are the combined doctoral programs in the Big Ten. Harvard, Columbia, Yale, and Cornell

are developing a common medical library. Indeed, it is interesting to note how many universities have joint programs of one kind or another. We do not believe that this is an accident, but instead flows from the characteristics of these organizations. In our study, which includes rehabilitation centers, we have observed the attempt by one organization to develop a number of joint programs for the mentally retarded. These efforts are being financed by the Department of Health, Education, and Welfare and evidently reflect a governmental concern for creating more co-operative relationships among organizations. Even in the business world, where the pursuit of profit would seem to make the joint program an impossibility, there are illustrations of this phenomenon. Recently, Ford and Socony started a joint research project designed to develop a superior gasoline.

It is this apparently increasing frequency of joint programs that makes the concept not only theoretically interesting, but empirically relevant, since, in so far as one can predict, joint programs are increasingly becoming a mechanism for solving certain organizational problems. We will discuss in detail the measurement of this concept in a later section of this paper.

THEORETICAL FRAMEWORK

Our discussion of the relationship between interorganizational interdependence and intraorganizational properties makes several fundamental assumptions about the nature of organizational behavior. Since these so centrally underlie the interpretation of our results,

they should be made explicit:

(1) There is a strain towards maximizing organizational autonomy, and thus towards limiting the degree of organizational interdependence. [13]

Why would an organization enter into a joint program? This is not an easy question to answer, particularly if one accepts Gouldner's idea of the inherent strain towards functional autonomy. We very much agree with this thesis and believe that it is an important axiom of organizational life. But if this postulate is accepted, then why do organizations need to become involved with other organizations:

(2) Organizations need clients, financial support (grants, fees, capital, etc.), personnel, and other resources have varying degrees of availability in the environment.

Organizations must obtain these resources of clients, funds, personnel, etc., in order to achieve their objectives, and one way is to obtain them from other organizations:

(3) Participation in joint programs with other organizations is a mechanism for obtaining more resources from the environment.

For some organizations, entering into exchanges and joint arrangements with other organizations may virtually be necessary for survival. A key factor involved here is simply the reduction of costs--i.e. the attempt to provide the best quality and most extensive programming at the lowest possible cost. One way of accomplishing this is to enter into a joint activity with another organization that has a similar need.

While this accounts for one of the functions of joint programs--the gaining of additional resources to achieve organizational goals--it does not explain why some organizations are more likely than others to have high interdependence: that is, it does not explain the varying intensities of organizational interdependence:

> (4) The greater the degree of organizational complexity--i.e. the greater the degree of occupational diversity and the higher the degree of professionalism--the higher the degree of organizational interdependence (joint programs).[14]

Organizations that have a diversity of different occupational specialities and are highly professionalized are organizations in which there are likely to be strains towards providing more extensive and more specialized programs and activities. Elsewhere we have argued that organizational complexity is related to the development of new programs.[15] The more that an organization is concerned with the development of new programs, the more likely it is to become involved in joint programs with other organizations. Part of this is the sheer economics of organizational innovation. The creation of a joint program with another organization may reduce the cost of recruiting people having the requisite specialized skills for the new program. The sharing of staff can solve this problem of recruitment just as the sharing of funds can help solve the financial aspect of new programming. To put it another way, not all organizations are alike in their emphasis on the rate of program development. Some are innovators, creating new services and attempting to provide a model for other organizations. Some

are followers, waiting for a new program or service to be tested successfully before they will adopt it. The joint program, then, is a solution for the innovative organization. The probabilities of an organization having joint programs with other organizations are increased as the number of occupational specialities increases because this latter factor is associated with a strain towards new programs. Thus, joint programs often become the mechanisms of implementing new programs. Of course, not all new programs result in joint programs; organizations may have sufficient resources internally to implement new programs. Similarly, not all joint programs are new programs; a joint program may simply be the extension of an existing organizational activity. From another point of view, the greater the number of occupational specialities, the greater the number of potential organizations with which that organization can enter into joint arrangements.

Thus, joint programs become ways of gaining resources at a reduced cost, and the greater the complexity of an organization, the greater is likely to be the demand for additional resources. This accounts in part for the reason that some organizations enter into exchanges and joint arrangements with other organizations. Such joint activities are likely to imply some restrictions on the process of decision-making in an organization, and, therefore, on the autonomy of the organization. It follows that the establishment of relationships with other organizations is often an obligation made unwillingly, but of necessity. From this reasoning follows another assumption about organizational behavior:

(5) In entering into such joint arrangements, organizations attempt to maximize their gains while minimizing the cost to the organization.

This assumption suggests that organizations are more likely to enter into joint programs that do not require much loss of autonomy. For example, they are more likely to be receptive to research and in-service training programs than those involving the achievement of the goals of the organization. This assumption also suggests that organizations are more likely to opt for relationships with organizations that have different goals, precisely because this reduces the problem of autonomy. The problem of autonomy becomes greatest among organizations having similar objectives. When organizations have different goals, presumedly competition is reduced and co-operation is facilitated.[16]

Organizations therefore attempt to gain control over their environment; in another sense, they attempt to maximize their own autonomy and to co-opt organizations with which they enter into relationships. Thus, interorganizational analysis implies a continually moving equilibrium of relationships because the participating (and competing) units are continually "jockeying for position." Conflict is characteristic of many of these relationships; at the same time, there is always some cooperation among such organizations. It is not completely the Hobbesian "war of all against all," but rather there are definite bounds to the conflict. Litwak has described a similar process and referred to this phenomenon as a state of partial conflict.[17] The term "bounded conflict" appears to us to be a more appropriate label.

Finally, the tensions established by organizations engaged in joint activities leads to a final postulate about organizational behavior:

(6) Organizations that are interdependent have increased problems of internal coordination.

Joint activities of two or more organizations have many ramifications for the internal operation of each participating organization. Problems of coordination become particularly acute. The consequences of this are needs for heightened rates of internal communication, strains towards decentralization, lessen routinization of technology, reduced formalization of regulations, and increased complexity of the organizational structure. In other words, the continual problems of adjustment between two organizations involved in the same joint program require that each adopt a more relaxed and less rigid structure to facilitate their coordination, both internal and external.

In the next section the study design and methodology is discussed, including a discussion of measurement of the dependent variable--number of joint programs. The findings are then outlined. This is followed by our interpretation of the results and our conclusions.

STUDY DESIGN AND METHODOLOGY

The data upon which this study is based were gathered in sixteen social welfare and health organizations located in a large midwest metropolis in 1967. The study is a replication of an earlier study conducted in 1964. Ten organizations were private;

six were either public or branches of public agencies. These organizations were all the larger welfare organizations that provide rehabilitation, psychiatric services, and services for the mentally retarded as defined by the directory of the Community Chest. The organizations vary in size from twenty-four to several hundred. Interviews were conducted with 520 staff members of these sixteen organizations. Respondents within each organization were selected by the following criteria: (a) all executive directors and department heads; (b) in departments of less than ten members, one-half of the staff was selected randomly; (c) in departments of more than ten members, one-third of the staff was selected randomly. Non-supervisory administrative and maintenance personnel were not interviewed.

Aggregation of Data

This sampling procedure divides the organization into levels and departments. Job occupants in the upper levels were selected because they are most likely to be key decision makers and to determine organizational policy, whereas job occupants in the lower levels were selected randomly. The different ratios within departments insured that smaller departments were adequately represented. Professionals, such as psychiatrists, social workers, rehabilitation counselors, etc., are included because they are intimately involved in the achievement of organizational goals and are likely to have organizational power. Non-professionals, such as attendants, janitors, and secretaries are excluded because they are less directly involved in the achievement of organizational

goals and have little or no power. The number of interviews varied from eleven in the smallest to sixty-two in one of the larger.

It should be stressed that in this study the units of analysis are organizations, not individuals in the organizations. Information obtained from respondents was pooled to reflect properties of the sixteen organizations, and these properties are then related to one another. Aggregating individual data in this way presents methodological problems for which there are yet no satisfactory solutions. For example, if all respondents are equally weighted, undue weight is given to respondents lower in the hierarchy. Yet those higher in the chain of command, not the lower status staff members, are most likely to make the decisions which give an agency its ethos.[18]

We attempt to compensate for this by computing an organizational score from the means of social position within the agency. A social position is defined by the level or stratum in the organization and the department or type of professional activity. For example, if an agency's professional staff consists of psychiatrists and social workers, each divided into two hierarchal levels, the agency has four social positions: supervisory psychiatrists, psychiatrists, supervisory social workers and social workers. A mean was then computed for each social position in the agency. The organizational score for a given variable was determined by computing the average of all social position means in the agency.[19]

The procedure for computing organizational scores parallels the method utilized in selecting respondents. It attempts to represent organizational life more accurately by not giving disproportionate weight to those social positions that have little power and that are little involved in the achievement of organizational goals.

Computation of means for each social position has the advantage of avoiding the potential problem created by the use of different sampling ratios. In effect, responses are standardized by organizational location--level and department--and then combined into an organizational score. Computation of means of social position also has a major theoretical advantage in that it focuses on the sociological perspective of organizational reality.

The Measurement of Joint Programs

The degree of organizational interdependence--i.e. interorganizational activity--is measured by the number of joint programs with other organizations. There are several possible measures of the nature and degree of interorganizational interdependence among social welfare and health organizations. Among these are:

1. The number of cases, clients or patients referred or exchanged.
2. The number of personnel loaned, borrowed, or exchanged.
3. The number, sources, and amounts of financial support.
4. The number of joint programs.

The first two of these were used in an earlier study of interorganizational relationships.[20] In our research project we found that organizations such as rehabilitation workshops and family agencies simply did not keep records of the number of walk-ins or calls referred by other organizations. Similar problems were

encountered with personnel. Thus we found great difficulty in using these measures of interdependence. While the nature and amounts of financial support is an interesting and important aspect of interorganizational analysis, it is not included in this study.

We asked the head of each organization to list every joint program in which his organization had been involved in the past ten years, whether terminated or not. A profile of each program was obtained including the name of participating organizations, goals of the program, number and type of clients or patients involved, and source of financial and other resources for the program. Only existing programs and those involving the commitment of resources by all participating organizations--whether personnel, finances, space, etc.--were included in our analysis.

Since a number of our sixteen organizations had participated in joint programs with each other, it was possible to check the reliability of their responses. We did not find any difficulties of recall for this period of time. In part, this is probably because most of the joint programs, once started, tended to continue over time. Some organizations had maintained their organizational relationships for as many as twenty years. Then too, the joint program is not a minor incident in the life of an organization which also facilitates recall. We did discover that organization heads tended to think of the purchase of services as a joint program. To solve this problem we had included in our interview schedule a series of follow-up questions about the amount of staff shared and the amount of funds contributed by each organization involved in the joint program.

Another problem of measurement centered around the difficulty of defining separate joint programs. For example, there was a tendency for an organization with a history of successful relationships (those that endured for more than two years) to develop a number of joint programs with the same organization. The relationship would grow in scope and depth in much the way that one would predict from Homans' hypotheses about the interaction between people.[21] This raised the difficulty of whether joint programs with the same organization should be counted as separate programs. Our solution was to count the program separately if it involved different activities. Thus a research program and an education program with the same organization, two common kinds of programs, would be counted as separate joint programs. The key in making this decision was the idea of separate activities. In fact, programs were usually developed at different dates, suggesting again that our solution is a correct one. At the same time, if an organization developed the same joint program with three organizations, this was counted only once. From a practical standpoint these attempts at refinement were not so important because it is clear that the differences among the sixteen organizations in our study on this dimension are so great that similar ranking would occur, regardless of how one counted the programs.

The number of existing joint programs among these sixteen organizations ranged from none to 33. Rehabilitation centers had the highest average number of programs, although the range was quite extensive among other organizations in our study (Table 1).

The special education department and hospitals had an intermediate

TABLE 1 ABOUT HERE

range of programs. Social casework agencies and homes for the emotionally disturbed had the least number of joint programs. In every case, however, there was some variation within each organizational category.

FINDINGS

The discussion of findings focuses primarily on the consequences of organizational interdependence for organizational structure, although some discussion of possible causes are later discussed. This is a necessary limitation because the data on organizational structure were gathered in January and February, 1967. The number of joint programs, while representing those in existence at that point in time, in reality refers to a process that had occurred over a long period of time. With the exception of one organization that had a history of interrupted relationships, most of the organizations in our study have had relatively stable relationships for long periods of time. In some cases the organizations had some joint programs for as long as 15 to 20 years. Therefore, it is best to interpret these findings as consequences of organizational interdependence and not causes.

1. Highly interdependent organizations are more complex organizations, that is, they are more highly professionalized and have more diversified occupational structures. There are essentially two aspects of complexity as we have defined it: the degree to

which there is a high number of different types of occupational activities in the organization and the degree to which these diverse occupations are anchored in professional societies.[22] One of the most startling findings in our study is the extremely high correlation between the number of different types of occupations in an organization and the number of joint programs (r = .87).[23]

TABLE 2 ABOUT HERE

The addition of joint programs evidently makes an organization aware of the need for still more specialties. One rehabilitation center used social workers in a joint program involving the mentally retarded with several other agencies. It then decided to add social workers to a number of its other programs. The addition of new specialties may also be necessary in order to help solve some of the problems of coordination created by the joint programs.

The degree to which an organization is professionalized is also strongly related to the number of joint programs. We measured the degree of professionalism in organizations in two ways: first, the degree to which the organizational members received professional training and, second, the degree to which organizational members are currently active in professional activities, i.e. attending meetings, giving papers, or holding offices. The measure of current professional activity was also quite highly related to our measure of the number of joint programs (r = .60).[24] The degree of professional training had little relationship with the number of joint programs (r = .15).[25]

2. Highly interdependent organizations have more active internal communication channels. We measured the degree of internal communication in two ways. First, the number of committees in the organization and, second, the number of committee meetings per month. An active committee structure in an organization provides the potential for viable communication links in an organization. There was a moderately strong relationship between the number of organizational committees and joint programs ($r = .47$) and a very strong relationship between the number of committee meetings per month and the number of joint programs ($r = .83$). These are measures of the internal communication systems. Actually the system of communication for joint programs is even more complex than this. For example, one rehabilitation agency with the largest number of joint programs had a special board with the university with which it had many joint programs and was in the process of establishing another joint board with a second university. Another rehabilitation agency created a special steering committee to suggest and supervise joint programs; the members of this committee were representatives from other organizations.

3. Highly interdependent organizations have more decentralized decision-making structures. In our study staff members were asked how often they participated in organizational decisions about the hiring of personnel, the promotions of personnel, the adoption of new organizational policies, and the adoption of new programs or services. The organizational score was based on the average degree of participation in these four areas of decision-making.[26] The

greater the degree of participation in agency-wide decisions, the greater is the number of joint programs (r = .30). This appears to be measuring the way resources are controlled. A second kind of decision-making is about the control of work. We measure the degree of decision making about work with a scale called the "hierarchy of authority."[27] This scale had a relationship with the number of joint programs in the opposite direction of our expectation (r = .33).

Again, the essential reason for the strain towards decentralization of agency-wide decisions is because of the need for more internal coordination. Joint programs create continual problems of scheduling and of planning; these problems are best solved through some system of decentralization that involves the many occupational specialties that work in the joint programs.

4. Highly interdependent organizations tend to be slightly less formalized. Rules and regulations are important organizational mechanisms that are often used to insure the predictability of performance. There are several important aspects of rules as mechanisms of social control, one is the number of regulations specifying who is to do what, when, where, and why; this we call job codification.[28] A second is the diligency with which such rules are enforced; this we call rule observation.[29] Still a third is the degree to which the procedures defining a job are spelled out; this we call the index of specificity of jobs.[30]

Two of these three indicators of formalization, the degree of rule observation and the degree of specificity of jobs, had small inverse relationships with the number of joint programs

(r=-.06 in each case). The index of job codification was directly related to the number of joint programs (r = .13). This is the inverse of our expectations.

5. Highly interdependent organizations have somewhat less routinization of technology. By the degree of routinization of technology, we mean the degree to which staff members have non-uniform work activities.[31] This reflects the amount of variety and change in the work and is similar to Litwak's discussion of uniform and non-uniform work activities.[32] We found an inverse relationship between the number of joint programs and the degree to which the organizational structuring of work is routine (r = -.24).[33]

6. There is no systematic relationship between the degree of organizational technology and morale. We developed two different measures of morale--an index of job satisfaction and an index of satisfaction with expressive relations.[34] Since interdependent organizations have some organizational characteristics that are associated with higher morale, e.g. decentralization of decision-making, one might expect for morale to be higher in such organizations. While each measure of morale had a small negative relationship with the number of joint programs (r = -.14 and -.03 respectively), controlling for size resulted in a much more mixed set of relationships. The former relationship was attenuated while the latter was reversed. We conclude that there is no systematic relationship between morale and joint programs.

7. Highly interdependent organizations are more innovative organizations. The degree of organizational innovation is measured by the number of new programs that were successfully implemented in the organization during the eight year period of 1959 to 1966. The relationship between joint programs and new programs is .71. Of course, there is an element of spuriousness in this relationship since some of the new programs are joint programs. If the correlation coefficient is recomputed, eliminating all new programs that are also joint programs, we find identical results (r = .72).

The key idea in our interpretation is that it is the rate of organizational innovation that intensifies the need for new resources. The higher this rate, the more likely organizations are to use the joint program as a mechanism for cost reduction in such activities. The fact that some new programs are joint programs only strengthens our argument that the joint program is a useful solution for the organization seeking to develop new programs.

This interplay between new programs and joint programs can be made clear via several examples from our study. One rehabilitation center with a high rate of new programs developed joint programs with several organizations that were primarily fund raising organizations as a solution for funding its growth. But in turn these organizations recognized new needs and asked the organization to develop still more new programs in areas for their clients. This particular agency is presently exploring the possibility of developing special toys for the mentally retarded because one of its joint programs is with an organization concerned with this type of client.

Controls for Size of Organization

There is the strong possibility that many of these findings are simply a function of the size of the organization. It could be argued that larger organizations have more joint programs than smaller organizations because a larger staff can more easily negotiate, implement, and maintain joint programs with other organizations. On the other hand, one could argue that it is not the size of an organization, but the organizational characteristics themselves, as we have outlined them, that account for these findings. When each of the zero-order Pearsonian correlation coefficients were controlled for the size of the organization, the only case of any substantial change in the magnitude of relationship was with the indicators of morale. In fact, the strength of relationship between a few of these variables and the number of joint programs was actually increased when organizational size was controlled (See Table 2). We conclude that these results are not spurious results attributable to variations in organizational size.

DISCUSSION AND CONCLUSIONS

We noted that there is a greater degree of complexity, i.e. more occupational diversity and greater professionalism of staff, in those organizations with the most joint programs. The participation in joint programs is evidently one mechanism for adding new occupational specialties to the organization at a reduced cost. Through combining the resources of the focal organization with one or more other organizations, there is the possibility of

adding new occupational specializations to the organizational roster. This is especially true since joint programs are likely to be of a highly specialized nature, providing services and activities that the focal organization cannot support alone.

The involvement of staff in joint programs introduces them to new ideas, new perspectives, and new techniques for solving organizational problems. The establishment of collegial relationships with comparable staff members of other organizations provides them with a comparative framework for understanding their own organizations. This is likely to affect their professional activities--attendance at meetings of professional societies--as well as reinforce professional standards of excellence. In these ways the involvement of organizations in joint programs has the effect of increasing the complexity of these social and health welfare organizations.

The number of joint programs also has other important implications for the internal structure of organizations. The partial or whole commitment of organizational resources to other organizations is likely to affect various departments, the business office, as well as the central programs of such an organization. Problems of coordination are likely to become particularly acute under such circumstances. The organization is forced to overcome these problems by heightening the frequency of internal communication. A more diverse committee structure and more committee meetings are mechanisms for handling such problems.

But this in turn has implications for the way in which power is distributed in the organization. A highly active committee

structure is likely to bring a larger number of staff members into organizational decision-making, and thus bring about greater decentralization of the organization. Additionally, the highly professionalized staffs of such organizations are likely to demand a voice in agency-wide decisions. Thus, both these factors--an active committee structure and professionalism of staff--are linked to organizational interdependence, and each in turn is linked to decentralization of decision-making in the organization.

There are still other consequences for such organizations; namely, organizations that are highly interdependent are organizations that are less formalized. Since they are highly professionalized, have viable communications links, and have decentralized power arrangements, they are organizations that are also likely to have a low degree of rule observation and concreteness of jobs. The implementation of a number of joint operations with other organizations precludes the possibility of having highly structured or closely supervised jobs. Too much flexibility is needed by staff members in carrying out these joint activities with other organizations. Thus, highly interdependent organizations are more likely to have loosely articulated job arrangements. The degree of rule observation and the degree of concreteness of jobs are likely, therefore, to be lower in highly interdependent organizations.

Two of the organizational characteristics that are most closely linked to the number of joint programs with other organizations--occupational diversity and professionalism--are also organizational characteristics that lead to a high degree of organizational

innovation within an organization. Through the cross-fertilization of ideas from the interaction of different occupations on the one hand and the imperatives of excellence inherent in professional standards on the other, there is likely to be a strain towards new programs. Some will be implemented using only organizational resources; others will be brought about through joint programs with other organizations.

This part of the discussion has suggested some reasons for a high number of joint programs being associated with these organizational properties. The way in which our discussion has been framed has started with the presence of joint programming and then traced some implications for internal organizational arrangements. But the flow of influence could be in the opposite direction. While the nature of our research methodology does not permit us to argue very persuasively any causal links, we can logically, although not empirically, argue that two of the organizational characteristics we have discussed--occupational diversity and professionalism--are likely to encourage the establishment of joint programs.

Organizational members who are professionally active and highly involved in their respective professional societies continually receive information about new techniques, new approaches, as well as evaluation of older approaches and ideas in their jobs through participation in professional societies and through reading professional periodicals. Similarly, there is likely to be a high degree of cross-fertilization of ideas in organizations with a multiplicity of occupational perspectives. The potential for

intellectual conflict, together with the imperative of professionalism, is likely to lead to dissatisfaction with current solutions to problems and the search for new ones. Such intellectual tension is likely to be especially actue in social welfare and mental health organizations, such as those in our study, where the state of knowledge about curing man's social and psychic ills is somewhat primitive and continually changing. Thus, organizational members in highly professionalized and occupationally diverse organizations are likely to propose and implement new programs and new approaches, often times of a highly specialized nature, on a rather routine basis. But, no highly complex organization is likely to have adequate organizational resources of money and personnel to implement, or even consider, all the new approaches and programs that may be suggested.[35] The <u>need</u> for more resources outlined at the beginning of this paper is therefore likely to be intensified. A reasonable solution to this problem is to combine the resources of the organization--personnel, space, money--with those of another organization in order to fill these highly specialized needs. The more diverse the occupational structure of an organization and the more professionally active its staff, the greater is this tendency, and, therefore, the higher the number of joint programs. Thus, it seems reasonable that inherent in these two organizational characteristics--professionalism and occupational diversity--lie some roots of interorganizational ties.

This latter reasoning implies that the factors of professionalism and occupational diversity are possible causes of the

establishment of joint programs. Some support for this contention is obtained by looking at the relationship between occupational diversity at an earlier point in time and the number of joint programs at present. The relationship between the occupational diversity of the organization and the number of joint programs in 1967 is very high whether we use the number of occupations in 1959 (r = .84), the number of occupations in 1964 (r = .86) or the number of occupations in 1967 (r = .87). While time sequence is not the same as causation, this does suggest that occupational diversity is not a function of new programs. Rather it suggests that organizations that have a high number of joint programs are organizations that have been occupationally diverse for a number of years.

TABLE 1

AVERAGE NUMBER OF JOINT PROGRAMS BY TYPE OF ORGANIZATION

Type of Organization	Number of Organizations	Average Number of Joint Programs	Range
Rehabilitation Centers	3	20.7	8-33
Special Education Department--public schools	1	15.0	15
Hospitals	3	8.3	6-12
Homes for emotionally disturbed	3	2.3	1-3
Social casework agencies	6	1.2	0-4
All organizations	16	7.3	0-33

TABLE 2

RELATIONSHIPS BETWEEN THE NUMBER OF JOINT PROGRAMS AND ORGANIZATIONAL CHARACTERISTICS

	Pearsonian Product-Moment Correlation Coefficient of each organizational characteristic with the number of joint programs	Partial correlation coefficient of each organizational characteristic with the number of joint programs, controlling for size of org.
1. Degree of Complexity		
Index of Professional Training	.15	.35
Index of Professional Activity	.60	.56
Number of Occupations: 1967	.87	.88
2. Internal Communication		
Number of committees	.47	.41
Number of committee meetings per month	.83	.81
3. Degree of Centralization		
Index of Participation in Decision-making	.30	.25
Index of Hierarchy of authority	.33	.38
4. Degree of Formalization		
Index of Job Codification	.13	.18
Index of Rule Observation	-.06	-.27
Index of Specificity of Job	-.06	-.19
5. Degree of Routinization		
Index of Routineness of Job	-.24	-.28
6. Degree of Morale		
Index of Job Satisfaction	-.14	-.06
Index of Satisfaction with Expressive Relations	-.03	.10
7. Degree of Organizational Innovation: 1959-66		
Number of New programs (including new programs that are joint programs)	.71	.68
Number of New programs (excluding new programs that are joint programs)	.72	.79

FOOTNOTES

[1]Perhaps the only exception is the study T.V.A. and the Grass Roots by Philip Selznik (Berkeley: University of California Press, 1953). It should be noted that this was a study of a single organization and, thus, did not provide an opportunity for testing propositions.

[2]William M. Evan, "The Organization Set: Toward a Theory of Inter-Organizational Relations," in James D. Thompson (editor), Approaches to Organizational Design (Pittsburgh: University of Pittsburgh Press, 1966), pp. 173-191 is an example of this.

[3]Theodore Caplow, Principles of Organization (New York: Harcourt, Brace & World, Inc., 1964), pp. 317-365.

[4]Alexis deTocqueville, Democracy in America (New York: Alfred A. Knopf, Inc., 1945), and William Kornhauser, The Politics of Mass Society (Glencoe, Ill.: The Free Press of Glencoe, 1959).

[5]Ralf Dahrendorf, "Out of Utopia: Toward a Reorientation of Sociological Analysis," American Journal of Sociology, 64 (September, 1958), pp. 115-127; Lewis Coser, The Functions of Social Conflict (Glencoe, Ill.: The Free Press of Glencoe, 1956); Dennis Wrong, "The Oversocialized Conception of Man in Modern Society," American Sociological Review, 26 (April, 1961), pp. 183-193.

[6]The general lack of consideration of conflict in organizational analysis is probably a consequence of the relatively few studies of the relationships between organizations, where conflict is more apparent. By and large, the organizational literature is based on a large number of single case studies in which the relationships among organizations are unlikely to be considered.

[7]Sol Levine and Paul E. White, "Exchange as a Conceptual Framework for the Study of Interorganizational Relationships," Administrative Science Quarterly 5 (March, 1961), pp. 583-601.

[8]Eugene Litwak and L. F. Hylton, "Interorganizational Analysis: A Hypothesis on Coordinating Agencies," Administrative Science Quarterly 6 (March, 1962), pp. 395-426.

[9]Evan, op. cit.

[10]Ernest A. T. Barth, "The Causes and Consequences of Interagency Conflict," Sociological Inquiry 33 (Winter, 1963), pp. 51-57.

[11]William H. Form and Sigmund Nosow, Community in Disaster (New York: Harper & Row, 1958).

[12]Paul Harrison, Authority and Power in the Free Church Tradition (Princeton, N. J.: Princeton University Press, 1959), Chapter III.

[13]This is derived from Gouldner's discussion of functional autonomy. While his model was designed to explain intra-system conflict and cooperation, the ideas are equally applicable to a discussion of interorganizational analysis. See Alvin Gouldner, "Reciprocity and Autonomy in Functional Theory," in Llewellyn Gross (editor), Symposium on Sociological Theory (New York: Harper and Row, 1959), pp. 241-270.

[14]This is implied also by Mark Lefton and William Rosengren in their article "Organizations and Clients: Lateral and Longitudinal Dimension," American Sociological Review, 31 (December, 1966), pp. 802-810. Their argument suggests that interorganizational relationships develop because of interest in the client. The key point here is that interest in the client is created under the conditions of complex organizational structures.

[15]Jerald Hage and Michael Aiken, "Program Change and Organizational Properties: A Comparative Analysis," American Journal of Sociology, 72 (March, 1967), pp. 503-519.

[16]Hawley has talked about this phenomenon is discussing symbiotic as opposed to commensalistic relationships among social units. Cf. Amos H. Hawley, Human Ecology (New York: The Ronald Press, 1951).

[17]Eugene Litwak, "Models of Bureaucracy Which Permit Conflict," American Journal of Sociology, 67 (September, 1961), pp. 177-184.

[18]For a discussion of some of the basic differences between individual and collective properties, see Paul Lazarsfeld and Herbert Menzel, "On Individual and Collective Properties," in Etzioni (ed.), op. cit., pp. 422-40; and James S. Coleman, "Research Chronicle: The Adolescent Society," in Phillip E. Hammond (ed.), Sociologists at Work (New York: Basic Books, 1964).

[19]One advantage of this procedure is that it allows for the cancellation of individual errors made by the job occupants of a particular position. It also allows for the elimination of certain idiosyncratic elements that result from the special privileges a particular occupant might have received as a consequence.

An alternative procedure for computing organizational means is to weigh all respondents equally. These two procedures yield strikingly similar results for the variables reported in this paper. The product moment correlation coefficients between the scores based on these two computational procedures were as follows for the variables indicated:

Hierarchy of authority	.93
Participation in decision making	.85
Job codification	.89
Rule observation	.89
Index of specificity of jobs	.93
Index of routinization of organizational structure	.94
Job satisfaction	.93
Satisfaction with expressive relations	.73
Professional training	.90
Professional activity	.93

[20]Levine and White, op. cit., p. 589.

[21]George Homans, The Human Group (New York: Harcourt, Brace, & World, Inc., 1950).

[22]It should be noted that our count of occupational specialties is not based on the number of specific job titles. Instead, each respondent was asked what he did and then this was coded according to the kind of professional activity and whether it was a specialty. This procedure was used for two reasons. First, it allows for comparability across organizations. Second, it avoids the problem of task specialization where one activity might be divided into many specific and separate tasks. See Victor Thompson, Modern Organizations (New York: Alfred A. Knopf Inc., 1964), Chapter).

[23]Since the variable of number of joint programs is quite dispersed with a range of 0-33 and a mean of only 7.3, it is entirely possible that the unusually high correlations in this table are simply a function of a highly skewed distribution on this variable. Therefore, we computed two nonparametric measures of correlation, Spearman's rank order correlation coefficient (rho) and Kendall's rank correlation coefficient (tau) for the four largest correlations shown in the table. The results are as follows:

	Correlation Coefficient between Number of Joint Programs and Organizational Characteristics		
Organizational Characteristic	Pearsonian r	Spearman's rho	Kendall's tau
Number of Occupations: 1967	.87	.81	.74
Number of committee meetings per month	.83	.61	.54
Number of new programs: 1959-1966 (including new programs that are joint programs)	.71	.84	.75
Number of new programs: 1959-1966 (excluding new programs that are joint programs)	.72	.80	.70

The strength of these relationships remain strong even when using nonparametric correlational methods. In fact, the nonparametric methods actually increased the strengths of some relationships.

[24]The index of professional activity, which ranged from 0 to 3 points, was computed as follows: (a) 1 point for belonging to a professional organization; (b) 1 point for attending at least two-thirds of the previous six meetings of any professional organization; (c) 1 point for the presentation of a paper or holding an office in any professional organization.

[25]The index was scored as follows: (a) High School graduates or less education with no professional training received a score of 0; (b) high school graduates or less education with some professional training received a score of 1; (c) staff members with a college degree or some college but an absence of other professional training received a score of 2; (d) staff members with a college degree or some college and the presence of some other professional training received a score of 3; (e) a presence of training beyond a college degree and the absence of other professional training received a score of 4; (f) a presence of training beyond a college degree and the presence of other professional training received a score of 5.

[26]The index of actual participation in decision making was based on the following four questions: (1) How frequently do you usually participate in the decision to hire new staff? (2) How frequently do you usually participate in the decisions on the promotion of any of the professional staff? (3) How frequently do you participate in decisions on the adoption of new policies? (4) How frequently do you participate in the decisions on the adoption of new programs? Respondents were assigned numerical scores from 1 (low participation) to 5 (high participation), depending on whether they answered "never," "seldom," "sometimes," "often," or "always," respectively, to these questions. An average score on these questions was computed for each respondent, and then the data were aggregated into organizational scores as described above.

[27]The empirical indicators of these concepts were derived from two scales developed by Richard Hall, namely, hierarchy of authority and rules (see his "The Concept of Bureaucracy: An Empirical Assessment," American Journal of Sociology, LXIX (July, 1963), 32-40). The index of hierarchy of authority was computed by first averaging the replies of individual respondents to each of the following five statements: (1) There can be little action taken here until a supervisor approves a decision. (2) A person who wants to make his own decisions would be quickly discouraged here. (3) Even small matters have to be referred to someone higher up for a final answer. (4) I have to ask my boss before I do almost anything. (5) Any decision I make has to have my boss's approval. Responses could vary from 1 (definitely false) to 4 (definitely true). The individual scores were then combined into an organizational score as described above.

[28]The index of job codification was based on the following five questions: (1) A person can make his own decisions without checking with anybody else. (2) How things are done here is left up to the person doing the work. (3) People here are allowed to do almost as they please. (4) Most people here make their own rules on the job. Replies to these questions were scored from 1 (definitely true) to 4 (definitely false), and then each of the respondent's answers was averaged. Thus, a high score on this index means high job codification.

[29]The index of rule observation was computed by averaging the responses to each of the following two statements: (1) The employees are constantly being checked on for rule violations. (2) People here feel as though they are constantly being watched, to see that they obey all the rules. Respondents' answers were coded from 1 (definitely false) to 4 (definitely true), and then the average score of each respondent on these items was computed. Organizational scores were computed as previously described. On this index, a high score means a high degree of rule observation.

[30]The index of specificity of job was based on the following six questions: (1) Whatever situation arises, we have procedures to follow in dealing with it. (2) Everyone has a specific job to do. (3) Going through the proper channels is constantly stressed. (4) The organization keeps a written record of everyone's job performance. (5) We are to follow strict operating procedures at all times. (6) Whenever we have a problem, we are supposed to go to the same person for an answer. Replies to these questions were scored from 1 (definitely false) to 4 (definitely true), and then the average score of each respondent on these items was computed as the other measures. A high score means a high degree of specificity of the job.

[31]See the work of Charles Perrow, "A Framework For The Comparative Analysis of Organizations," American Sociological Review, 32 (April, 1967), pp. 194-208; and Joan Woodward, Industrial Organization (London: Oxford University Press, 1965).

[32]Litwak, op. cit.

[33]The index of routine organizational structure was based on the following five questions: (1) People here do the same job in the same way every day (reversed). (2) One thing people like around here is the variety of work. (3) Most jobs have something new happening every day. (4) There is something different to do every day. (5) Would you describe your job as being highly routine, somewhat routine, somewhat non-routine, or highly non-routine? The first four items were scored from 1 (definitely true) to 4 (definitely false). On the fifth item scores ranged from 1 (highly non-routine) to 4 (highly routine).

[34]We used a satisfaction scale developed by Neal Gross, Ward Mason, and Alexander McEachern, Explorations in Role Analysis (New York: John Wiley & Sons, 1958), Appendix F. When factor analyzed, this battery provided the following scales: job satisfaction and satisfaction with expressive relations. The index of job satisfaction was computed on the basis of responses to the following four questions: (1) How satisfied are you with your present job when you compare it to similar positions in the state? (2) How satisfied are you with the progress you are making toward the goals which you set for yourself in your present position? (3) On the whole, how satisfied are you with your present job when you consider the expectations you had when you took the job? (4) How satisfied are you with your present job in light of career expectations? Replies were scored from 1 (very dissatisfied) to 4 (very satisfied), and then an average score for each respondent was obtained. These were then aggregated as described above into organizational scores.
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The index of satisfaction with expressive relations was computed on the basis of responses to the following three questions: (1) How satisfied are you with the head of your organization? (2) How satisfied are you with your supervisor? (3) How satisfied are you with your fellow workers? Responses were similarly scored from 1 (very dissatisfied) to 4 (very satisfied), and the same procedures as described above were followed.

35Cf. James Q. Wilson, "Innovation in Organization: Notes Toward a Theory," in Thompson, op. cit., pp. 193-218.